

The project begins

Newly appointed as the CEO of the Compound Semiconductor Applications Catapult, Stephen Doran talks to **Neil Tyler** about his vision for the catapult and the wider industry

Just over a week ago Stephen Doran took up his position as CEO of the Compound Semiconductor Applications Catapult. His remit, to accelerate UK industry's access and ability to exploit advances in compound semiconductor (CS) industries.

"I want to establish the UK as the premier location for compound semiconductors, and the Catapult offers the UK its best opportunity to achieve this and to become a leader in this technology," Doran says.

"I want to use the expertise and facilities available to the Catapult to accelerate the introduction of UK developed compound semiconductor technology into advanced systems and ensure that the UK has, and plays, a central part in the developing global supply chain."

From faster internet connections to improved battery life compound semiconductors can, and are already, improving on the performance of silicon.

"Silicon has proved a great substrate," says Doran, "but it is fast reaching its speed limit or 'mobility', which determines how fast a microprocessor can work."

Silicon is a single element semiconductor material but by combining two elements, it is possible to create a compound semiconductor which can support much

higher 'mobility', so faster microprocessors.

"Using compound semiconductors we will be able to supply improved display technologies, deliver faster mobile technology, offer better support gesture control, develop more efficient engine management systems – we may even be able to double the range of electric vehicles, for example - and enable many more devices to operate at temperatures beyond that of current silicon technology," Doran suggests.

"Our role will be to use the CSA Catapult to provide a link, or bridge, between companies developing novel semiconductor materials, topologies and devices with those companies developing applications and, where necessary, with those organisations looking to provide the finance."

The CSA Catapult will itself provide commercial support to the sector where gaps exist in the marketplace, Doran explains.

"The Catapult has a unique set of skills to hand and we can support companies providing access to research, services, insight and technical or commercial validation."

But as well as commercial support it will also offer support in terms of opportunities to collaborate and advice on funding as well as access to expertise from engineers and scientists.

Pioneering CS technology

Doran brings over 20 years of experience to the position, having previously worked at Motorola, Wolfson Microelectronics and Raytheon.

"It's been a career spent developing and delivering new products at the cutting edge," he says.

At Motorola he helped develop new mobile products for the European and Asian markets; served as chief operating officer at Wolfson, working alongside the CEO to reposition the company and transform the company's portfolio and then ran Raytheon's operations in the UK where he was Director of Operations and Transformation.

"The insights I gleaned from those years in business will now be applied to running the Catapult and placing the UK at the forefront of an industry that some analysts predict could be worth £125billion by 2025," he explains. "Over a long period of time I have worked to bring new designs and systems to market; working with industry partners our aim will be to ensure the successful application of pioneering CS technology in the UK."

While measuring the size of the CS industry isn't quite an exact science, definitions can be a little hazy, recent research suggests that the UK's share of the global market currently stands at around 9 percent.

"That's a sizeable slice of a fast-growing market and we don't want to simply stand still, we want to grow that share," Doran says.

"We are operating on a pretty level playing field, at the moment. The UK has a good mix of SMEs and Tier One companies in this space and we are currently engaging with a lot of them, and that will accelerate going forward," Doran suggests. "We need to develop market intelligence and better understand the market. At this point in time, you need to listen twice as much as you talk," he says.

The Catapult, part of the UK's nationwide



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Before joining the Compound Semiconductor Application catapult Doran worked for 25 years in the electronics industry.

Prior to his role as Director of Operations and Transformation at Raytheon UK, he served as Chief Operating Officer at Wolfson Microelectronics, a company specialising in signal processing and mixed signal audio semiconductors.

His work with Motorola saw him with responsibility for new product development and commercial strategy.

network of technology innovation centres is based in Wales and forms a pillar of the CS Connected cluster that has developed in South Wales.

"The catapult network was set up by Innovate UK to drive economic growth," explains Doran, "and by locating us in this part of Wales we will be able to exploit the country's recognised leadership in advanced electronics, science and innovation."

The emerging international CS cluster in South Wales received a further boost just a few weeks ago when Infineon Technologies signed a definitive agreement with a company called Neptune 6 under which the latter will be acquiring the old International Rectifier (IR) site in Newport.

The move was welcomed by Doran.

"We want to create a campus feel across the cluster, akin to the Fraunhofers in Germany,

where academia and industry can come together and collaborate," he explains.

Doran's years with Motorola, Wolfson and Raytheon saw him travel extensively around the globe.

"I was always struck by the number of former UK residents I met working overseas, especially after the demise of Silicon Glenn. Why weren't they working in the UK and why do we undervalue our technologists, when compared to other comparable economies?"

"Assuming the leadership of the Catapult is important to me as I want to ensure we bring that talent back to the UK and that the economy delivers on its potential.

"The talent is certainly there and we want to make the most of it and at the CSA Catapult we are determined to create an environment that not only encourages innovation but ultimately attracts Tier Ones back to the UK."